

CLAIMS:

1.

- 1 A fuel tank assembly for a fuel injected combustion engine comprising:
- 2 a fuel tank having an internal surface, an external surface, a bottom wall
- 3 defined between the internal and external surfaces, a fuel chamber defined by the
- 4 internal surface, and a bottom access hole extending through the bottom wall to
- 5 communicate with the fuel chamber; and
- 6 a fuel pump subassembly substantially inserted into the fuel chamber through
- 7 the bottom access hole, the fuel pump subassembly having a bottom flange engaged
- 8 sealably to the bottom wall and covering the access hole, the fuel pump subassembly
- 9 having a fuel pump carried by the bottom flange and disposed in the fuel chamber.

2.

- 1 The fuel tank assembly set forth in claim 1 comprising:
- 2 a fuel pressure regulator projecting upward from the flange and into the fuel
- 3 chamber for receiving fuel from the fuel pump; and
- 4 a fuel outlet nozzle extending downward through the flange for flowing fuel
- 5 from the pressure regulator and out of the fuel chamber.

3.

- 1 The fuel tank assembly set forth in claim 2 comprising a fuel filter projecting
- 2 upward from the flange into the fuel chamber, and wherein the fuel filter filters fuel
- 3 flowing from the fuel pump to the fuel regulator.

4.

1 The fuel tank assembly set forth in claim 3 comprising a fuel level sensor of
2 the fuel pump subassembly engaged to the bottom flange.

5.

1 The fuel tank assembly set forth in claim 4 comprising an electric connector
2 formed unitarily to the bottom flange and extending through the flange.

6.

1 The fuel tank assembly set forth in claim 1 comprising an elongated fuel pump
2 bracket projecting longitudinally from the bottom flange and engaged to the fuel
3 pump.

7.

1 The fuel tank assembly set forth in claim 6 comprising:
2 a first forward foot of the bracket; and
3 a first vibration dampening member engaged directly between the bottom
4 flange and the first foot of the bracket for isolating the bottom flange from the bracket
5 and the fuel pump.

8.

1 The fuel tank assembly set forth in claim 7 comprising:
2 an elongated bridging portion of the bracket projecting from the first foot and
3 away from the flange; and
4 wherein the fuel pump is engaged to the bridging portion.

9.

1 The fuel tank assembly set forth in claim 8 comprising:
2 a rearward foot of the bracket biased against the internal surface of the fuel
3 tank; and
4 wherein the bridging portion is flexible and extends resiliently between the
5 first forward foot and the rearward foot.

10.

1 The fuel tank assembly set forth in claim 9 comprising:
2 a vibration dampening pad engaged to the rearward foot; and
3 wherein the dampening pad is compressed resiliently between the rearward
4 foot and the internal surface by the bridging portion.

11.

1 The fuel tank assembly set forth in claim 10 wherein the dampening pad
2 engages the internal surface at the bottom wall of the fuel tank.

12.

1 The fuel tank assembly set forth in claim 7 comprising:
2 a second forward foot of the bracket; and
3 a second vibration dampening member engaged directly between the bottom
4 flange and the first foot of the bracket for isolating the bottom flange from the bracket
5 and the fuel pump.

13.

1 The fuel tank assembly set forth in claim 11 comprising:
2 a second forward foot of the bracket; and
3 a second vibration dampening member engaged directly between the bottom
4 flange and the first foot of the bracket for isolating the bottom flange from the bracket
5 and the fuel pump.

14.

1 The fuel tank assembly set forth in claim 7 wherein the vibration dampening
2 member is a fuel resistant rubber grommet.

15.

1 The fuel tank assembly set forth in claim 14 comprising:
2 a stanchion projecting upward from the bottom flange, the stanchion having a
3 threaded blind bore;
4 the first foot of the bracket having an inner circumferential edge defining a
5 hole;
6 the grommet having a circumferential groove open radially outward;
7 wherein the grommet extends through the hole and the circumferential edge
8 seats in the circumferential groove;
9 a male fastener threaded into the blind bore and extending upward
10 concentrically through the grommet to secure the leg of the bracket to the flange; and
11 wherein the first foot does not directly engage the flange.

16.

1 The fuel tank assembly set forth in claim 1 wherein the fuel tank is motorcycle
2 fuel tank having a forward global portion, having a top mounted fuel filler cap and a
3 rearward converging portion wherein the fuel pump is disposed.

17.

1 The fuel tank assembly set forth in claim 16 comprising a bag-type inlet fuel
2 filter being in contact with the internal surface of the fuel tank at the bottom wall and
3 a side wall of the fuel tank.

18.

1 The fuel tank assembly set forth in claim 11 wherein the bridging portion is an
2 arcuate ban having a concave bottom side facing downward and an opposite top side
3 engaged to the fuel pump.

19.

1 The fuel tank assembly set forth in claim 11 wherein a sub-bracket is engaged
2 to the bridging portion for supporting a fuel level sensor of the fuel pump
3 subassembly.

20.

1 The fuel tank assembly set forth in claim 18 comprising:
2 a strap wrapped about the fuel pump and the ban of the bracket;
3 a first finger projecting forward from the ban, the first finger having an
4 upward bent distal end for engaging a forward end of the fuel pump; and

5 a second finger projecting rearward from the ban, the second finger having an
6 upward bent distal end for engaging a rearward end of the fuel pump.

21.

1 A method of manufacturing a fuel tank assembly for a fuel injected
2 combustion engine, the method comprising the steps of:
3 assembling a fuel pump subassembly having a bottom flange, a bracket
4 engaged upward from the bottom flange, and a fuel pump engaged to the bracket;
5 inserting the fuel pump subassembly upward through a bottom access hole of a
6 fuel tank;
7 contacting a rearward foot of the bracket against an internal surface of the fuel
8 tank;
9 flexing the bracket;
10 covering the access hole of the fuel tank with the bottom flange; and
11 sealing the flange to an external surface of the fuel tank while the bracket
12 remains flexed.

22.

1 The method of manufacturing set forth in claim 21 comprising the further step
2 of rotating the fuel pump subassembly in an imaginary generally vertical plane,
3 simultaneous to the step of inserting the fuel pump subassembly, so that the rearward
4 foot contacts the internal surface at a bottom wall of the fuel tank.